NORELCO  
MODEL EL3542NORELCO  
MODEL EL3542

## GENERAL INFORMATION

The Norelco Model EL3542 is a four-track monaural recorder. Stereo tapes may be played back on this tape recorder.

Recordings may be made from a microphone, radio, or phonograph. The unit may also be used as a public address system.

This model has three tape speeds; 7 1/2, 3 3/4, and 1 7/8 ips. Using a four-track tape, recording times are as follows:

Length	7 1/2 ips	3 3/4 ips	1 7/8 ips
1200 ft.	1 hour	2 hours	4 hours
1800 ft.	1 1/2 hours	3 hours	6 hours
2400 ft.	2 hours	4 hours	8 hours

This recorder is designed to operate on 110, 127, 220, and 245 volts AC, 60 cycles.

Supplied By:

North American Philips Company, Inc.  
High Fidelity Products Division  
230 Duffy Avenue  
Hicksville, L. I., New York

**HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana**

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## PREPARING FOR OPERATION

1. Remove the lid from the carrying case.
2. Place the recorder at a convenient height where the controls are accessible.
3. Remove the AC cord from the compartment in

the bottom of the case. Plug the cord into a convenient AC outlet of proper rating.

4. The recorder is now ready for use. Before operating, the operator should familiarize himself with the controls.

## FUNCTION OF CONTROLS

### Play

Sets the recorder for playback of a recording when depressed with one of the speed keys.

### Record

Depressing this key simultaneously with the Record Lock button places the recorder in the record mode.

### Pause

The Pause key temporarily stops the tape motion.

### Pause Release

Depressing this button releases the Pause key allowing the recorder to continue operation.

### Rewind

The Rewind key (left side of Stop key), when depressed, rewinds the tape at a high speed.

### STOP

When this key is depressed halfway, it stops the tape motion. Depressing the key all the way down allows the recorder to be used as a public address system.

### Fast Forward

The Fast Forward key (right side of Stop key), when depressed, winds the tape onto the take-up reel at a high speed.

### Off Button

This button, when depressed, turns off the power to the recorder.

### Speed Keys

Depressing any one of the three keys turns the recorder on. Tape speed will be set for  $1\frac{7}{8}$ ,  $3\frac{3}{4}$ , or  $7\frac{1}{2}$  ips, depending on the key depressed.

### Volume

There are two Volume controls for setting the recording level during Record and the volume during Play. The upper control is used when recording from a microphone. The lower control is used when recording from a radio or phonograph.

### Super Impose

This switch permits recording sound on sound when moved to the "In" position.

### Record Level

The Record Level indicator indicates the recording level during Record.

### Track Selector

This control selects the tracks to be recorded on, such as 1 or 4 and 2 or 3.

### Automatic Stop

The recorder will be automatically stopped when the metallic control foils on the ends of the recording tape pass through the tape stop. The foil actuates a relay circuit which in turn stops the unit. This feature will work only on tapes provided with control foils.

### Index Counter

When starting a new recording, set the index counter to zero. Logging the tape at different points makes it easy to locate any given part of a recording.

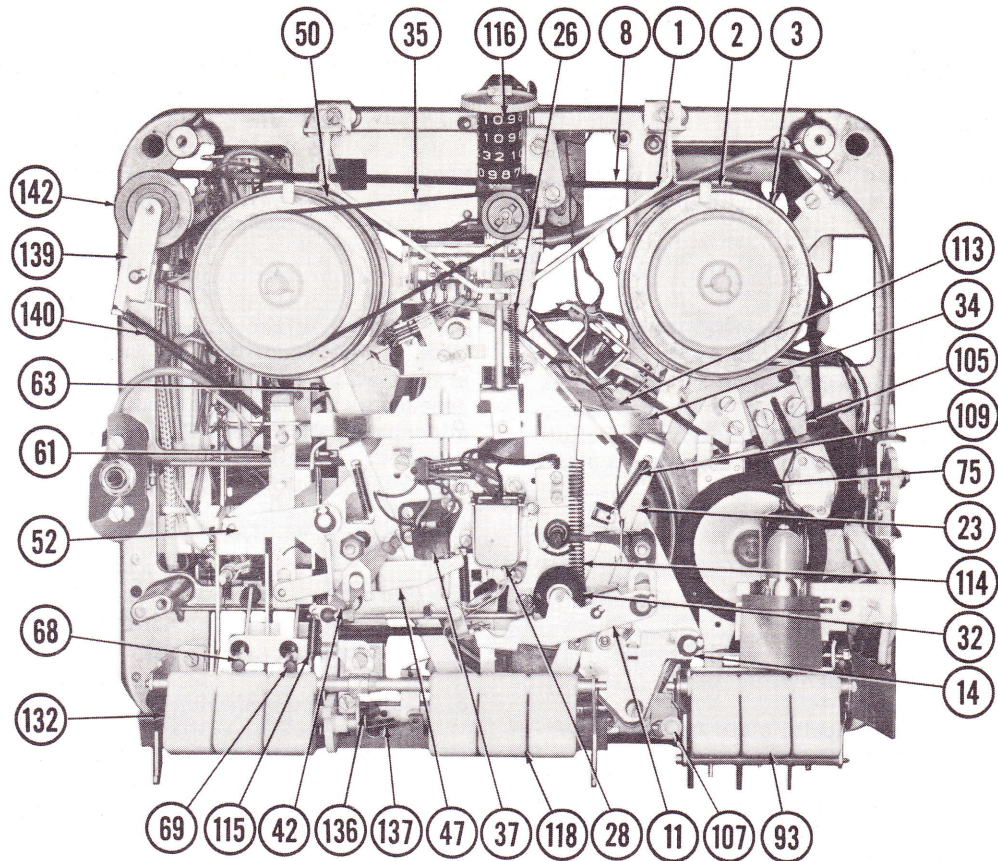
## OPERATING INSTRUCTIONS

1. Place a reel of tape on the left-hand turntable and an empty reel on the right-hand turntable.
2. Unwind about 12" of tape from the supply reel and hold a section of it taut. Insert this section into the tape slot, making certain the dull-coated side faces the rear of the recorder.
3. Insert the free end of the tape into one of the radial slots in the hub of the take-up reel. Turn the reel several turns to secure the tape to the reel and take up all slack between reels.

### To Record from Microphone

1. Thread the tape.
2. Set the index counter to zero.
3. Depress correct speed key. (This also turns on the recorder.)
4. Plug microphone into Microphone jack.
5. Depress the Stop key.





TOP VIEW OF MECHANISM

6. Depress the Pause key.
7. Place track Selector at 1-4 position.
8. Depress the Record key and Record Lock button.
9. Adjust the recording level using the upper volume control.
10. Press the Pause Release button to start the recording.
11. When track 1 is recorded, turn the full reel over and place it on the left spindle. This places track 4 in position for recording. After track 4 is recorded, turn the full reel over and place it on the left spindle. Place the Selector in the 2-3 position and repeat the previous procedure.

#### To Record from a Radio or Television Receiver

Recordings may be made by one of the following methods:

1. Microphone Pickup from Radio Speaker — Place the microphone about 6 to 12 inches in front of the speaker. Turn the radio volume control to a normal level. Turn the radio tone control to treble or high. Set the recording level of the recorder, using the upper volume control, and proceed as described under "To Record from Microphone".

2. Across Volume Control of Radio — Prepare a shielded cable with alligator clips on one end and phono plug on the other end. Connect the clips across the radio or TV volume control and the phono plug to the Radio/Phono input jack on the recorder. Set the recording level, using the lower volume control, and proceed as described under "To Record from Microphone".
3. Direct Connection to Loudspeaker — Make a shielded cable with two alligator clips on one end and a phono plug on the other. Connect the alligator clips to the speaker terminals and insert the phono plug into the Radio/Phono input on the recorder. Set the recording level, using lower volume control, and proceed as described under "To Record from Microphone".

#### To Record from Record Player

Connect the record player to the Radio/Phono input of the recorder. Set the recording level and record as described under "To Record from Microphone".

#### To Play a Recording ( Monaural)

1. Thread the tape.
2. Set the counter to zero.
3. Press desired speed key.



4. Set Selector to 1-4 position.
5. Press Play key.
6. Adjust volume control for desired listening level.
7. After tracks 1 and 4 have been played, move the Selector to the 2-3 position and repeat playback procedure.

#### To Play a Recording ( Stereo)

The output of the record-playback head is connected directly to the Stereo jack on the left side of the recorder. Connect an external amplifier to the jack for reproduction of stereo tapes. Turn the Volume control on the recorder fully counterclockwise. Follow the Monaural playback instructions for Stereo playback.

#### Public Address

The unit may be used as a public address system by depressing the Stop key all the way down simultaneously with one of the speed keys (preferably 7 1/2 ips). When using the microphone input, the upper volume control varies the output level. When using the Radio/Phono input, the lower volume control varies the output level.

#### Erase

Previous recordings are automatically erased when a new recording is made. If a tape is to be erased without putting a new recording on the tape, proceed as with a regular recording except leave the microphone and Radio/Phono inputs disconnected and turn both volume controls to their extreme counterclockwise position.

### DISASSEMBLY

#### To Remove Recorder from Case

1. Remove two push-on knobs.
2. Remove plastic ornamental plate and head cover by pulling up gently.
3. Remove three ornamental screws and two sheet metal screws holding the steel top plate to the transport. Remove the plate.

4. Remove the four nuts holding the tape transport to the case.
5. Pull the tape transport out of the case far enough to disconnect the speaker and to remove the line cord from the bottom compartment.
6. To reassemble, reverse the above procedure.

### ADJUSTMENTS

#### Record-Playback Head

1. Adjust the head height until the top of the upper core of the head is in line with the upper edge of the tape.
2. Insert a new blank tape in the recorder.
3. Place the track Selector in the 1-4 position.
4. Record a 1000 cps (100% modulation) signal.
5. Invert the tape and play it back with the track Selector in the 2-3 position. The 1000 cycle signal should not be audible. If the signal is audible the head must be raised.

#### Erase Head

The erase head should be adjusted so that the upper edge of the core is approximately even with the upper edge of the tape. Record a 1000 cps (100% modulation) with the track Selector in 1-4 position. Rewind the recording. Connect a voltmeter to the output of the recorder. Play back the recorded tape and note the meter reading. Invert the tape and pass the recorded portion through the recorder with the Selector in the 2-3 position and the unit in Record. (Leave the microphone input and Radio/Phono input disconnected.)

Again invert the tape, move the track Selector to the 1-4 position, and replay the tape. Check the output on the meter. Attenuation of the signal must not be greater than 1.5 db. Repeat this test to determine proper head adjustment.

#### Tape Pressure Pad

This pad must press the tape firmly against the gap of the record-playback head.

1. Thread the tape through the record-playback head but not past the pressure roller.
2. Press Play key.
3. Place a knot in the end of the tape and pull the tape to the right past the head. The tape tension as it moves through the head should be between 0.525 and 0.875 ozs.
4. Bend the spring of the protection cap to obtain correct tension.

#### Tape Guide

The pointed end of the tape guide should be pointing toward the center of the capstan.



## Bias Adjustment

1. Connect a signal generator to the Mic. Input jack. Tune generator for 1000 cycles at 6.5 millivolt output.
2. Connect a DC VTVM between point  $\Delta$  and ground.
3. Adjust A1 and A2 for 70 millivolts. A compromise may be required between the bias frequency and distortion.

## REPLACEMENT OF PARTS

### Bearing Support with Pulley ( 102 )

1. Remove drive belt (8).
2. Remove mounting screws holding bearing support.
3. Hold the motor fan stationary and turn the pulley (102) counterclockwise. At the same time pull the spindle out of the coupling spring.
4. Insert new bearing support and pulley. Turn pulley so that coupling spring goes back in place.
5. Make certain that motor and pulley run freely before replacing drive belt.

### Upper Intermediate Wheel ( 75 )

1. Remove the bracket holding the record level indicator tube.
2. Remove grease cap (72) and "C" washer from top of wheel.
3. Loosen right-hand screw of speed selector assembly.
4. Pull pushbutton assembly toward front of recorder far enough to remove intermediate wheel (75).
5. To reassemble, reverse the foregoing procedure.

### Middle Intermediate Wheel ( 79 )

1. Remove intermediate wheel (75) as outlined previously.
2. Loosen two set screws of speed selector assembly and pull assembly towards front of recorder.
3. Lift guide bracket (77) out.
4. Remove intermediate wheel (79).
5. Be certain that wire spring of bracket holder is pushed between middle and lower intermediate wheels when reassembling.

### Lower Intermediate Wheel ( 80 )

1. Loosen speed selector assembly.
2. Swing line frame assembly with bracket and intermediate wheels outward.

3. Remove intermediate wheel (80).
4. When reassembling, be sure wire spring is between lower and middle guide brackets.
5. To reassemble, reverse the foregoing procedure.

### Flywheel ( 113 )

1. Remove counter drive belt (35) and drive belt (8).
2. Remove spring (26).
3. Remove turntables (3), driving discs (4) and (48), coupling wheels (7) and (50), take-up arm (23), and supply arm (63).
4. Unsolder leads from heads (28) and (37) and switch.
5. Remove three screws holding upper plate (24), and remove plate.
6. Remove flywheel (113).
7. Make sure new flywheel is properly centered and does not bind at any point.
8. To reassemble, reverse the foregoing procedure.
9. Start the recorder. Check to see if the mechanism is binding. Shut the mechanism off. The flywheel should coast for about  $2\frac{1}{2}$  to 3 minutes.

### Motor

1. Unsolder the leads.
2. Remove the driving belt (8).
3. Remove the mounting screws holding the motor.
4. Loosen the mounting screws holding the bearing support (105).
5. Remove clamp spring and fan.
6. Turn the pulley (102) counterclockwise and pull the spindle out of the coupling spring.
7. Install new motor and reverse foregoing to reassemble.



## CLEANING

The tape guides, capstan, and pressure pad should be cleaned with a soft brush and alcohol to remove tape residue.

Clean the erase and record-playback heads with a soft, lint-free cloth saturated with any good commercial head cleaner.

## LUBRICATION

The mechanism should be lubricated after every 1000 hours of operation or when moving parts have been replaced. When lubricating the mechanism do not get any oil or grease on the heads, rubber surfaces, or any part that touches the tape.

Lubricate the following parts with one or two drops of oil.

1. Flywheel bearings.
2. Motor bearings.
3. Pressure roller bearing.
4. Pulley bearings.

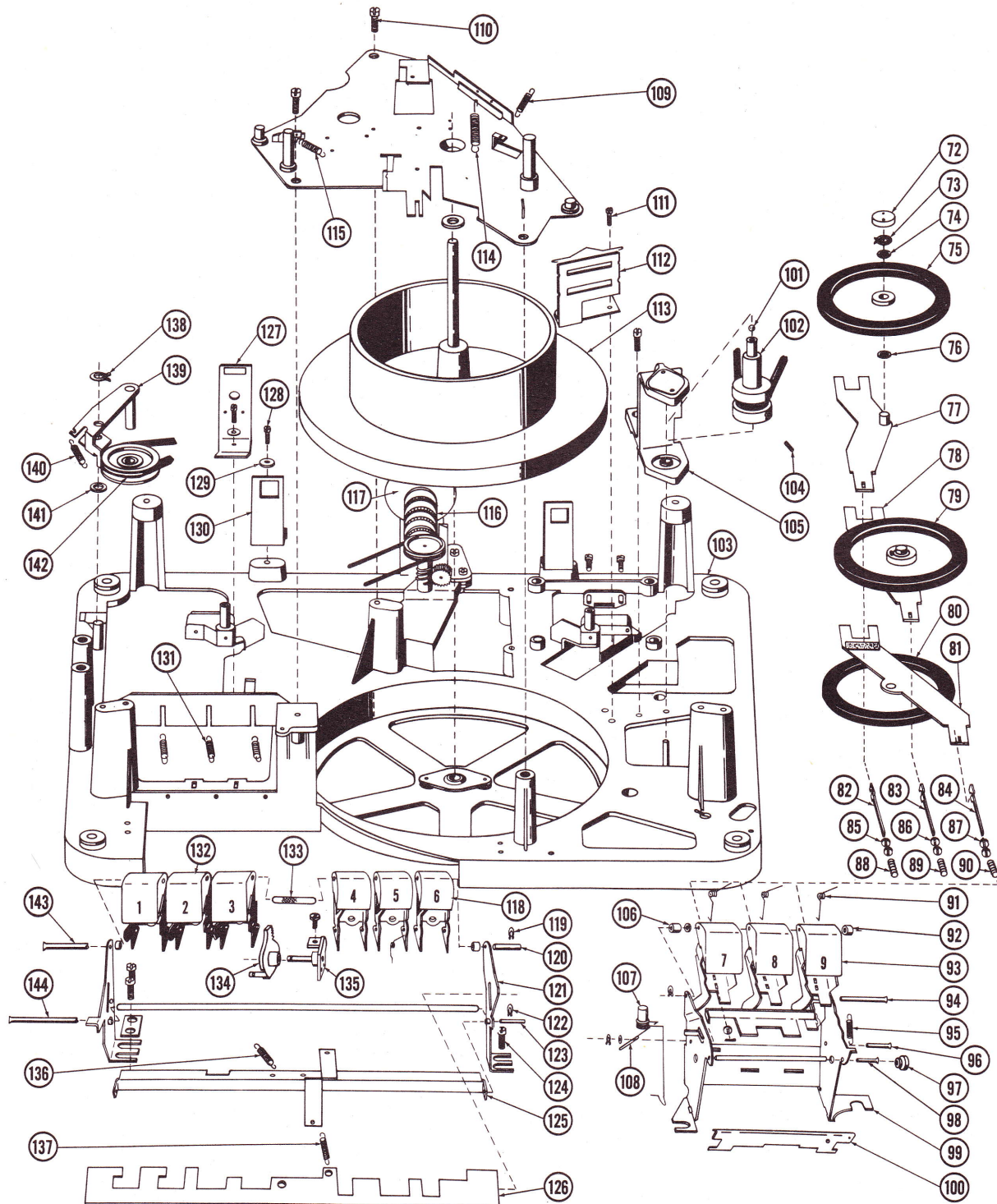
Lubricate the following surfaces with a good quality commercial grease:

1. Flywheel bearing seats.
2. The bearings of the three intermediate wheels.
3. The sides of the record, play, wind, and re-wind pushbuttons.
4. The sliding brackets in the pushbutton assemblies.
5. The idler wheel bracket.
6. The moving levers in the transport mechanism.
7. The right and left hand spindles.

## TROUBLE CHART

SYMPTOM	CAUSE	REMEDY
Recorder speed slow.	<ol style="list-style-type: none"> <li>1. Intermediate wheels (75), (79), or (80) dirty or worn.</li> <li>2. Oil or dirt on driving surface of pulley (102) or flywheel (113).</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace appropriate wheel.</li> <li>2. Clean pulley or flywheel surface with alcohol.</li> </ol>
Recorder does not operate with speed key depressed.	<ol style="list-style-type: none"> <li>1. Defective line switch.</li> <li>2. Defective motor.</li> <li>3. Defective power transformer.</li> <li>4. Defective fuse on power transformer.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace line switch.</li> <li>2. Replace motor.</li> <li>3. Replace power transformer.</li> <li>4. Replace fuse.</li> </ol>
Tape rewinds too slowly.	<ol style="list-style-type: none"> <li>1. Drive belt (8) greasy or stretched.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace drive belt.</li> </ol>
Tape loops.	<ol style="list-style-type: none"> <li>1. Spring (26) improperly adjusted.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust spring.</li> </ol>
Reels wobble.	<ol style="list-style-type: none"> <li>1. Spindle (6) or (49) bent.</li> <li>2. Unused intermediate wheels touching pulley (102).</li> </ol>	<ol style="list-style-type: none"> <li>1. Check guiding bracket.</li> <li>2. Check guiding bracket.</li> </ol>
Tape speed too slow.	<ol style="list-style-type: none"> <li>1. Dry flywheel bearing.</li> <li>2. Line voltage selector set wrong.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lubricate flywheel bearing.</li> <li>2. Check to see that it is set for proper line voltage.</li> </ol>
Idler wheel (142) squeals.	<ol style="list-style-type: none"> <li>1. Idler wheel bearing dirty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean and lubricate idler wheel bearing.</li> </ol>
Automatic stop does not function.	<ol style="list-style-type: none"> <li>1. End of tape switch misadjusted.</li> <li>2. Relay open or shorted.</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust end of tape switch.</li> <li>2. Replace relay.</li> </ol>
Counter does not function.	<ol style="list-style-type: none"> <li>1. Drive belt (35) off or broken.</li> <li>2. Gear mechanism jammed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace drive belt.</li> <li>2. Free gear mechanism.</li> </ol>

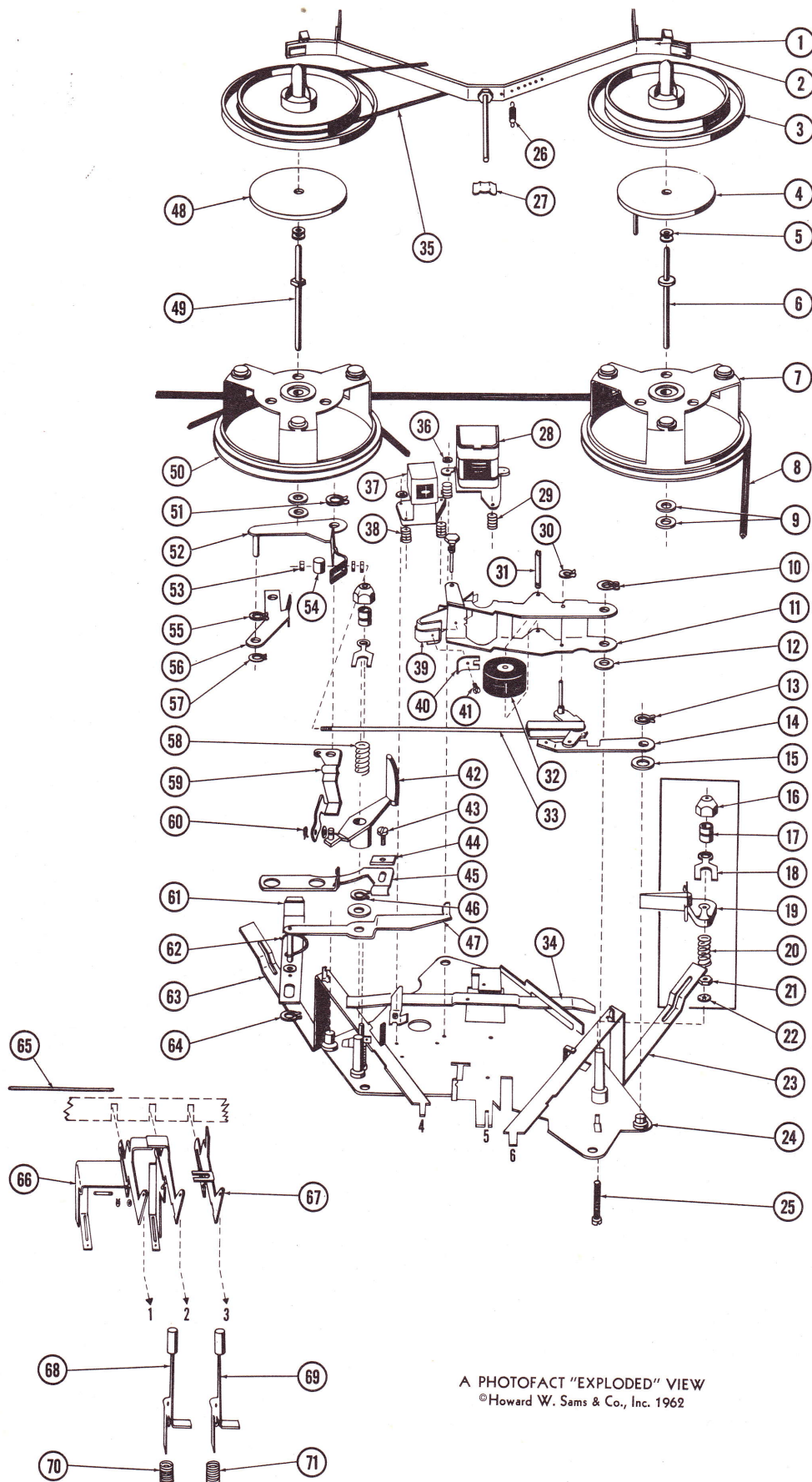




A PHOTOFACT "EXPLODED" VIEW  
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EXPLODED VIEW

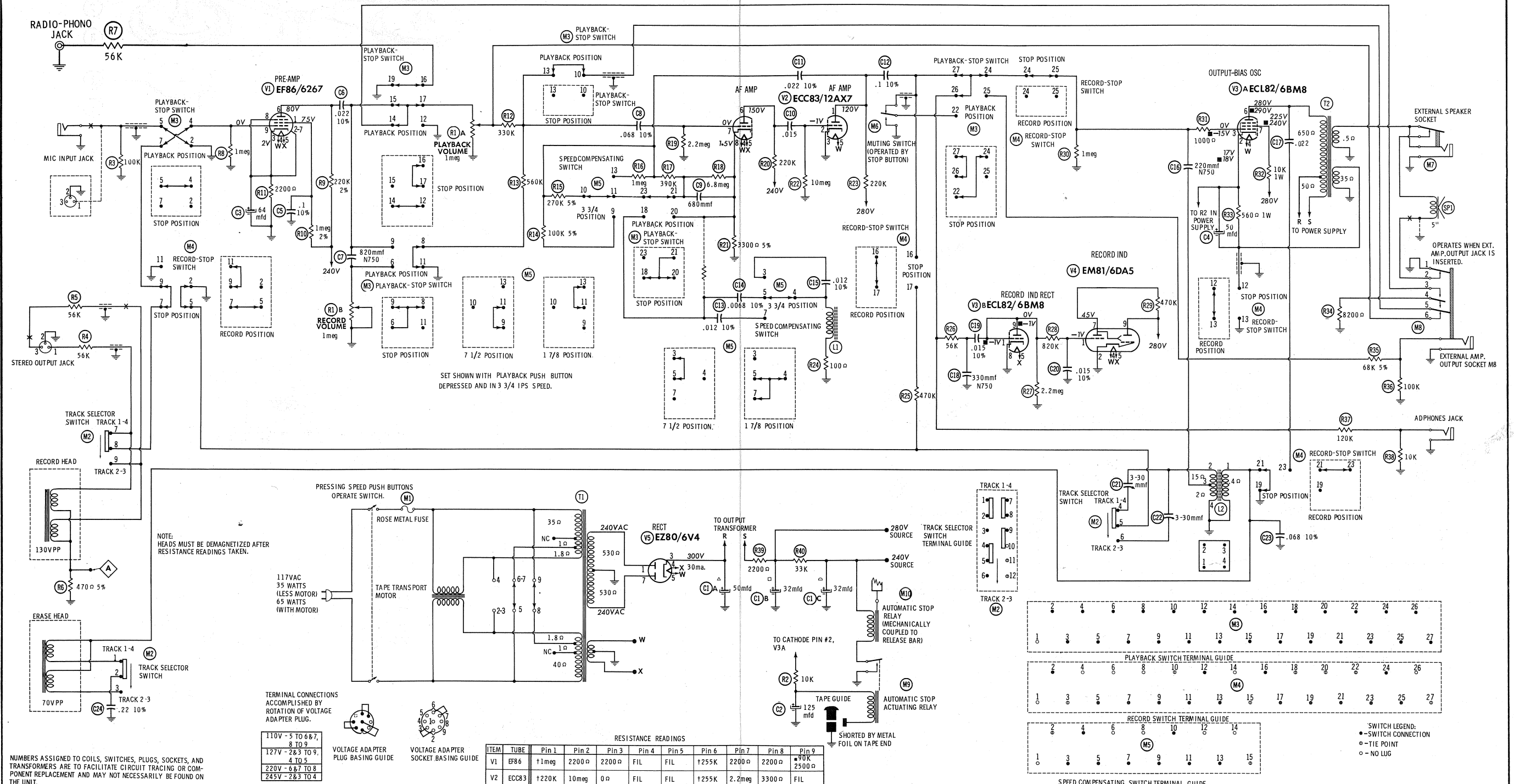




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EXPLODED VIEW



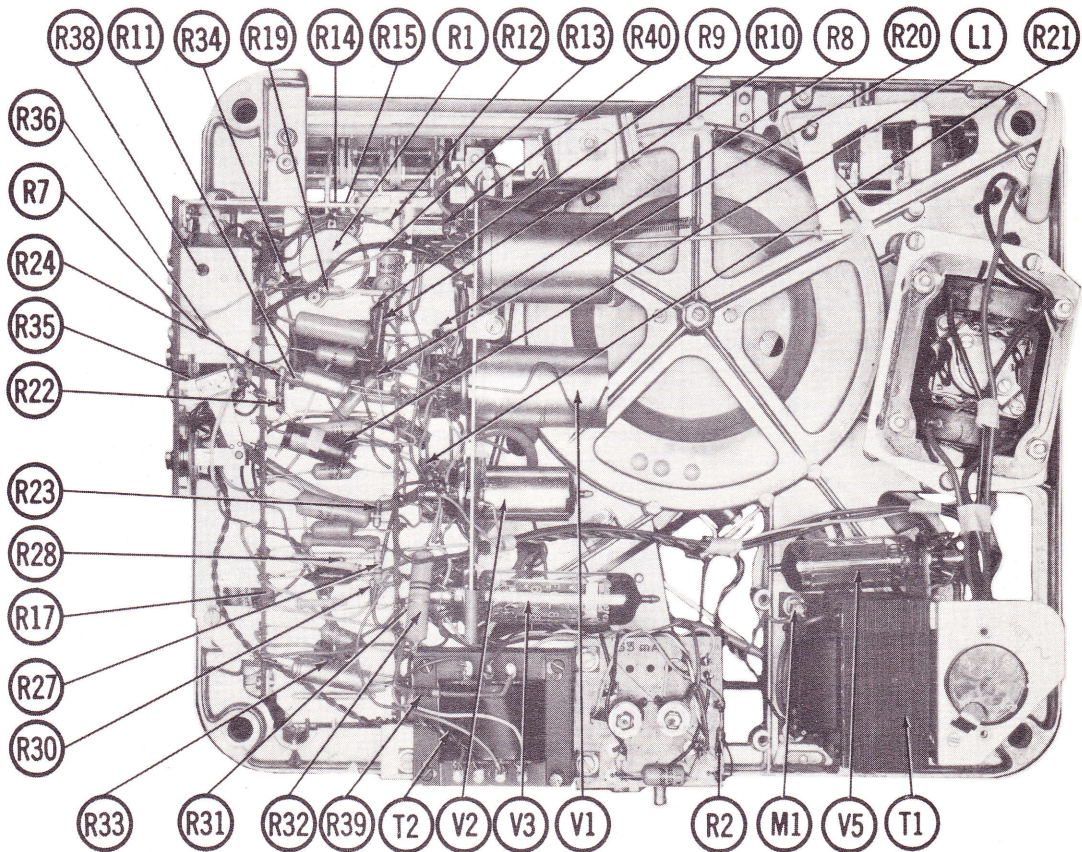
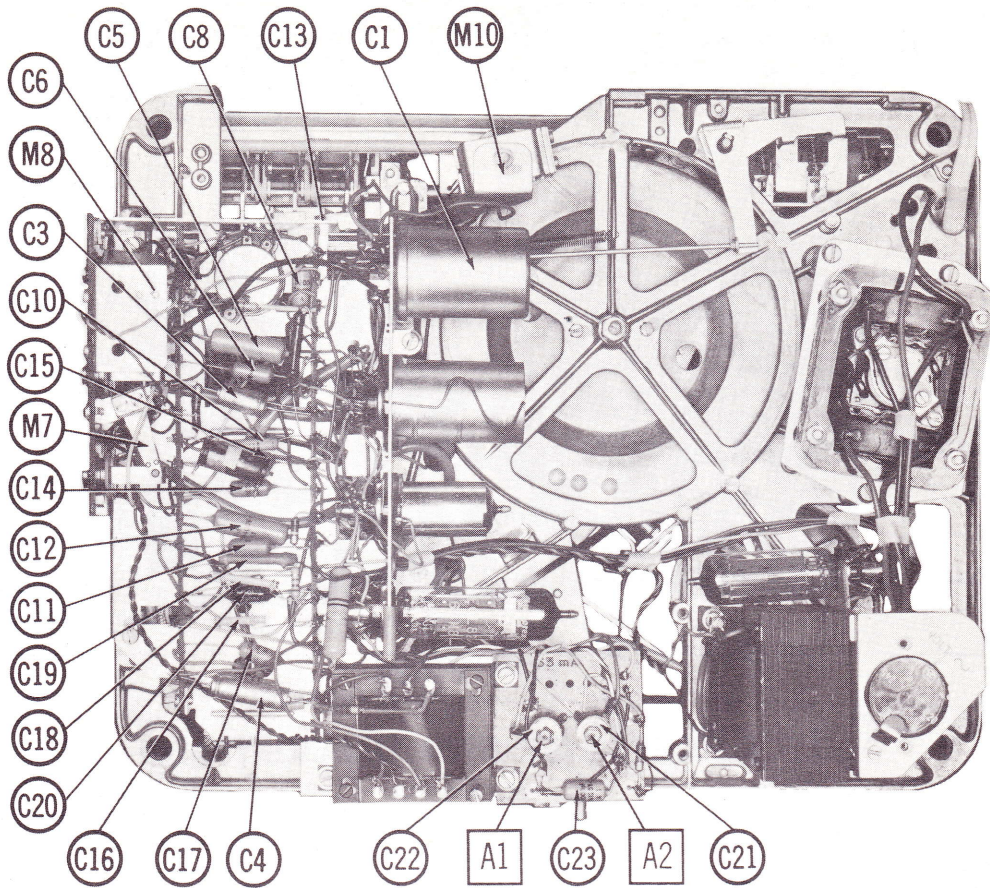


NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

- DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common ground.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance of component values makes possible a variation of  $\pm 15\%$  in voltage and resistance readings.
- All controls at minimum, proper output load connected.

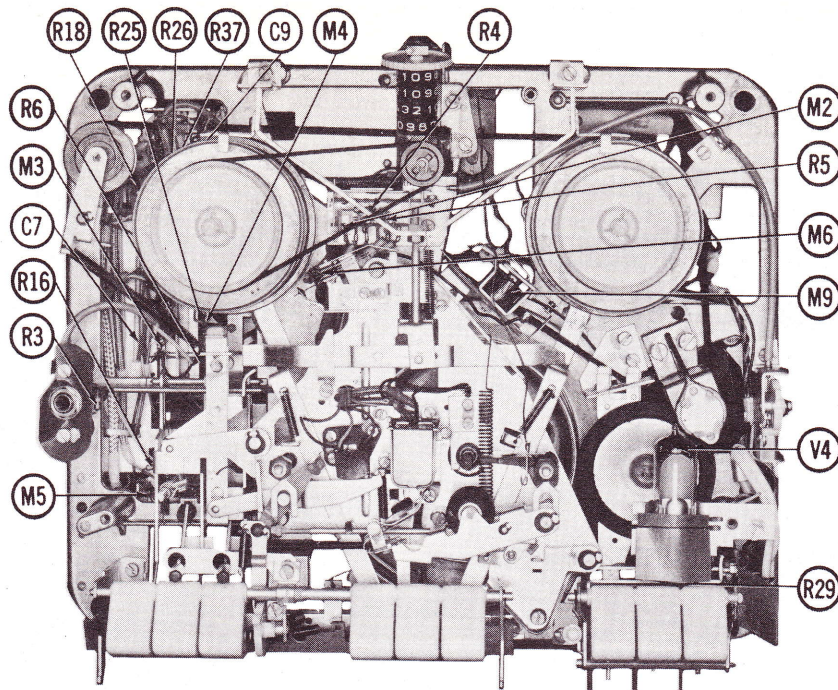
A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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BOTTOM VIEW OF MECHANISM





TOP VIEW

## ELECT. PARTS LIST AND DESCRIPTIONS

### TUBES

AMPEREX			GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Preamp.	EF86/6267	V4	Record Indicator	EM81/6DA5						
V2	AF Amplifier	ECC83/12AX7	V5	Rectifier	EZ80/6V4						
V3	Output-Bias Osc. - Record Indicator Rectifier	ECL82/6BM8									

### ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	NORELCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1A	.50	350	AC5483	AFH3-44-50	C0232	XC3-45	FP330.9	TMT3438	TVL-3641
B	.32	350							
C	.32	350							
C2	.125	25	909/C64	PRSI370	BR150-50	QT1-28	TC25015	TD-150-50	TVA-1311
C3	.64	25		PTT85	NLW75-25	MT1-20	TC2501	MLV50-25	TE-1210
C4	.50	25			NLW50-25	MT1-25	TC29		TE-1209

### FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENDO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	.1 400V 10%	#908/ 30E #908/ 30E	V84C4P1-10%	D6-681 DD-153	PM4P1	4DP-3-104	GEM-1001	4TM-P10
C6	.022 400V 10%		V84C4S22-10%		PM4S22	4DP-2-223	GEM-1612	4TM-S22
C7	820 N750							
C8	.068 125V 10%		V84C4S68-10%		PM4S68	4DP-3-683		4TM-S68
C9	680		SI 680		BYA10T68	CCD-681	B-368	10TS-T68
C10	.015		SI 15000		BYA10S15	CCD-153	B-115	5HK-S15
C11	.022 400V 10%		V84C4S22-10%		PM4S22	4DP-2-223	GEM-1612	4TM-S22
C12	.1 400V 10%		V84C4P1-10%		PM4P1	4DP-3-104	GEM-1001	4TM-P10
C13	.012 125V 10%		V84C2S15-10%		PM4S12	6DP-2-123	GEM-161125	6PS-S12
C14	.0068 400V 10%		V84C4D68-10%		PM6D68	6DP-1-682	GEM-16268	6TM-D68
C15	.012 125V 10%		V84C2S15-10%		PM4S12	6DP-2-123	GEM-161125	6PS-S12
C16	220 N750		N750-SI 220	TCN-220	C10T22U	CCTN-221	CN7-322	10TCU-T22
C17	.022 400V 10%		V84C4S22-10%		PM4S22	4DP-2-223	GEM-1612	4TM-S22
C18	330 N750		N750-SI 330	TCN-330	C10T33U	CCTN-301	CN7-333	10TCU-T33
C19	.015 500V 10%		SI 15000	DD-153	BYA10S15	CCD-153	B-115	5HK-S15
C20	.015 500V 10%				PM6S15	6DP-2-153		6TM-S15
C21	3-30							
C22	3-30							
C23	.068 125V 10%			V84C2S68-10%		PM4S68	4DP-3-683	4TM-S68
C24	.22 125V 10%			V84C2P22-10%		PM2P22	2DP-4-224	GEM-2022 2TM-P22

# Norelco Part No.

### CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA			
			NORELCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.
R1A	Volume (Playback)	1meg	BI64016			
B	Volume (Record)	1meg				



# ELECT. PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R2	10K				R22	10meg			
R3	100K				R23	220K			
R4	56K				R24	100Ω			
R5	56K				R25	470K			
R6	470Ω 5%				R26	56K			
R7	56K				R27	2.2meg			
R8	1meg				R28	820K			
R9	220K 2%				R29	470K			
R10	1meg 2%				R30	1meg			
R11	2200Ω				R31	1000Ω			
R12	330K				R32	10K 1W			
R13	560K				R33	560Ω 1W			
R14	100K 5%				R34	8200Ω			
R15	270K 5%				R35	68K 5%			
R16	1meg				R36	100K			
R17	390K				R37	120K			
R18	6.8meg				R38	10K			
R19	2.2meg				R39	2200Ω			
R20	220K				R40	33K			
R21	3300Ω 5%								

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		NORELCO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Equalizer Coil						
L2	Bias Osc.						

## TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	NORELCO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117VAC @ .3A (.72A)*	480VCT @ .03A	6.3VCT @ 2.2A	WT31092.1					* With Motor

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	NORELCO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	6700Ω Tap @ 7%	3-4Ω	WT51121					
		SEC. 2						
		100Ω						

## SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	NORELCO PART No.	QUAM PART No.	
SP1	5"	PM	3-4Ω	LD3501-74	5A07R	

## FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			NORELCO PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	Rose Metal							

## MISCELLANEOUS

ITEM No.	PART NAME	NORELCO PART No.	NOTES
M2	Switch	WT88831	Track Selector (2 Position Slide Type)
M3	Switch		Playback-Stop (2 Position Slide Type)
M4	Switch		Record-Stop (2 Position Slide Type)
M5	Switch	WT88665	Speed Compensating (3 Position Slide Type)
M6	Switch	WY83732	Mute (Spring Leaf Type)
M7	Switch		External Speaker Socket (Spring Leaf Type)
M8	Switch		External Amp. Output Socket (Spring Leaf Type)
M9	Switch & Relay	WT88293	Automatic Stop Actuating
M10	Relay	WT88291	Automatic Stop

## CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	WT91455	
Button	WT91454	

## WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Power Cord	8524 (Stranded) Available in 12 Colors
	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft.
	17109 (Plastic) or 17129 (Rubber) - 9 Ft.
Power Cord (Interlock Type)	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401 or 8421
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor-Unshielded)
	8429 (Two Conductor-Shielded)
	8419 (Three Conductor-Shielded)

NORELCO  
MODEL E13542

FOLDER 9

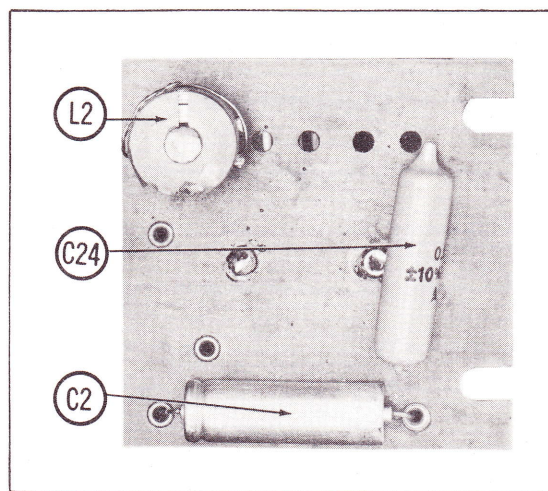


# MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	WRB801UU/4X6	Ornamental Screw (3 used)	51		Grip Ring
2	WT25215	Ornamental Head Cover	52		Record-Playback Arm.
3	WT85607	Ornamental Plate	53		Hex Nut
4	WT82293	Brake Bracket	54		Spacer Nut
5		Felt	55		Grip Ring
6	WT82193	Turntable, Right	56		Brake Release Arm
7	WT82194	Turntable, Left	57		Grip Ring
8	WT88655	Driving Disc, Right	58		Spring
9		Spacers	59	WT89056	Bracket With Button
10	WT88699	Spindle, Right	60		Grip Ring
11	WT88234	Coupling Wheel, Right	61		Turntable Pause Lever
12	WT49609	Drive Belt	62		Spring
13	A986865	Rings	63		Supply Arm
14		Grip Ring	64		Grip Ring
15		Pressure Roller Lever	65		Rod
16		Spacer	66		Playback Arm
17		Grip Ring	67		Pause
18		Lever	68	WT26186	Record Lock Button
19	A986895	Ring	69	WT26186	Pause Lock Button
20		Hex Nut (Part of Tape Guide)	70	WT73046	Spring
21		Bushing (Part of Tape Guide)	71	WT73046	Spring
22		Fork (Part of Tape Guide)	72		Grease Cap
23	WT90226	Tape Guide	73		Grip Ring
24		Spring (Part of Tape Guide)	74	A986895	Ring
25		Hex Nut	75	WT88186	Intermediate Wheel
26		Lockwasher	76	A986895	Ring
27		Take-up Arm	77	A986870	Guide Bracket
28		Upper Plate	78	A986870	Guide Bracket
29		Stud	79	WT88186	Intermediate Wheel
30		Spring	80	WT88186	Intermediate Wheel
31	WT85539	Spacer Spring	81	A986870	Guide Bracket
32	WT73068	Record-Playback Head	82		Push Rod
33		Spring	83		Push Rod
34	WT64612	Grip Ring	84		Push Rod
35	WT88166	Pressure Roller Spindle	85	A986895	Rings
36	WT83646	Pressure Roller	86	A986895	Rings
37		Knee Lever	87	A986895	Rings
38		Stop Bracket Arm	88	WT73050	Pressure Spring
39	WT49608	Counter Drive Belt	89	WT73043	Pressure Spring
40		Screw	90	WT73043	Pressure Spring
41	WT85549	Erase Head	91		Spring
42	WT73042	Spring	92		Spacer
43	WT82010	Pressure Felt Holder	93	WT26174	Speed Keys
44		Plate	94		Rod
45		Screw	95		Spring
46	WT90229	Lever	96		Rod
47		Screw	97		Bushing
48		Plate	98		Rod
49		Bracket	99		Slide Plate
50	WT47797	Grip Ring	100		Locking Bar
	WT88700	Bracket	101		Bearing
	WT88234	Driving Disc, Left	102	WT86082	Motor Pulley - 50 cycle
		Spindle, Left		WT86083	Motor Pulley - 60 cycle
		Coupling Wheel, Left	103		Main Mounting Plate
			104		Set Screw
			105		Bearing Support

# MECHANICAL PARTS LIST ( CON'T. )

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
106		Spacer	126		Up Lock Plate
107	WT26168	Off Button	127		Guide Bracket
108		Retaining Spring	128		Screw
109	WT74067	Spring	129		Washer
110		Screw	130		Stop Bracket Guide
111		Screw	131		Spring
112		Guide Bracket Support	132	WT26175	Keys
113	WT88603	Flywheel	133		Rod
114	WT74081	Spring	134		Knob (Dubbing)
115	WT74067	Spring	135		Knob Mount
116	WT89821	Counting Mechanism	136	WT74084	Spring
117		Counter Reset Wheel	137	WT74056	Spring
118	WT26175	Keys	138		Grip Ring
119		Grip Ring	139		Idler Wheel Bracket
120		Pin	140		Spring
121		Side Plate, Right	141		Spacer
122		Grip Ring	142	WT88187	Idler Wheel
123		Pin	143		Pin
124		Mounting Screw	144		Pin
125		Down Lock Plate			



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MODEL EL3542

FOLDER 9